

**REMARKS**

Claims 1-9, 11-16, 18-24, 26-31 and 33-37 are now pending in the application. The Examiner allowed Claims 1-8 subject to correction under 37 C.F.R. 1.75(a). Claims 10, 17, 25, and 32 were canceled without prejudice or disclaimer of the subject matter therein. Minor amendments have been made to the specification and claims to simply overcome the objections to the specification and rejections of the claims under 35 U.S.C. § 112. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

Support for the claim amendments can generally be found throughout the specification, claims, and drawings of the issued patent. More particularly, support for the claim amendments to claims 1-8, and 9-37, may be found with respect to column 3, line 43 through column 4, line 10. Support for the claim amendments may also be found with respect to column 4, line 66 through column 5, line 16; column 5, lines 37-51; and column 5, line 52 through column 6, line 67.

**OBJECTION TO THE DRAWINGS**

The Examiner objected to the drawings under 37 C.F.R. 1.83(a) for failing to show every feature of the invention specified in the claims.

Applicant respectfully traverses the objection and submits that the drawings indeed show every feature of the invention specified in the claims. In particular, Applicant respectfully submits that 37 C.F.R. 1.83(a) specifies that "conventional features disclosed in the description and claims, where the detailed illustration is not essential for proper understanding the invention, should be illustrated

in a drawing in the form of graphical drawings some that are labeled representation." Applicant respectfully submits that Figures 3-7 and the accompanying description indeed fully describe the fuzzy logic method of tuning a tunable RF device in the method of tuning an RF impedance matching network. In review of the forgoing, Applicant respectfully requests withdraw of the objection.

#### **SUBMISSION OF RIBBONED COPY OF THE SUBJECT PATENT**

The Examiner noted that the original ribboned copy of U.S. patent No. 5,842,154 has not yet been surrendered by the Applicant. Applicant respectfully submits that surrender of the original ribboned copy of U.S. patent No. 5,842,154 will occur in due course.

#### **AMENDMENTS TO SPECIFICATION**

The Examiner objected to the specification noting that a certificate of correction was granted to change the original patent and such changes were not properly entered into the reissue application as though part of the original patent. The specification has been amended above to convey these changes. In view of the amendment to the specification, Applicant respectfully requests withdrawal of this rejection.

#### **OBJECTION TO THE CLAIMS**

The Examiner objected to Claims 5 and 6 under 37 C.F.R. 1.75(i). Applicant has amended Claims 5 and 6 according to the Examiner's requirement.

The Examiner objected to Claims 1-37 under 37 C.F.R. 1.75(a) for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Applicant has amended several of the claims and has adopted several of the Examiner's suggestions. Regarding the Examiner's objections to claim 9, the last two lines regarding "the load impedance", Applicant respectfully submits that ample antecedent basis exists for the term load impedance. Applicant can find no reason why every modifier, i.e. "variable", need be included throughout the claim. In the alternative, Applicant respectfully requests the Examiner to cite relevant passages of MPEP that supports such a requirement. Applicant respectfully submits the same arguments with respect to objections raised by the Examiner at Claim 16, lines 9-10 and 13-14.

Accordingly, Applicant respectfully requests withdrawal of the objections to the claims.

#### **REJECTION UNDER 35 U.S.C. § 112**

Claims 31-37 stand rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. This rejection is respectfully traversed.

Applicant has amended Claim 31 to eliminate the gap between the steps and Claim 32 has been cancelled. Applicant believes this renders the stated grounds for rejection moot.

#### **REJECTION UNDER 35 U.S.C. § 251**

Claims 9-37 stand rejected under 35 U.S.C. § 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. This rejection is respectfully traversed.

Applicant has amended Claims 9, 16, 24, and 31 in response to the rejections and Claims 10, 17, 25, and 32 have been cancelled. Applicant believes Claims 9, 11-16, 18-24, 26-31 and 33-37 now include the claim limitations identified in the Reasons for Allowance in U.S. application serial no. 08/929,870.

#### **REJECTION UNDER 35 U.S.C. § 103**

Claims 31-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams (U.S. Pat. No. 5,889,252) in view of Travaglia (U.S. Pat. No. 5,805,649). This rejection is respectfully traversed.

With respect to Claim 31, Williams does not teach or suggest generating a control signal to adjust the variable impedance of a matching network by applying fuzzy logic rules to a sensed signal to generate a fuzzy output value. Williams uses a transformer in the impedance transformation.

The fuzzy logic approach of the present invention uses fuzzy logic rules to improve orthogonality. When there is more than one error signal, the signals are combined. Therefore, the fuzzy logic approach may use any matching network topology.

Travaglia does not teach or suggest using a fuzzy output value for control. Travaglia at best discusses a controller output based on the sum of the phase error and the fuzzy output. Travaglia also does not teach or suggest adjusting the variable

impedance of a matching network to match the impedance of a source and load. Travaglia at best discusses a controller that changes an oscillator frequency until its frequency equals that of a reference frequency to achieve phase lock.

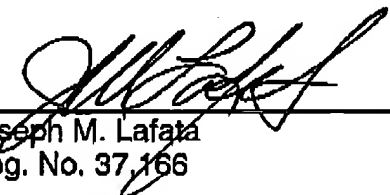
Claim 32 has been cancelled and Claims 33-37 depend directly from Claim 31 and are allowable for the same reasons. In view of the above, reconsideration and withdrawal of the rejections are respectfully requested.

### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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